

Typification of *Ranunculus bullatus* L. (Ranunculaceae)

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SYNOPSIS. The typification of *Ranunculus bullatus* L. is discussed and a lectotype and epitype chosen which maintain usage of the name in the sense of subsp. *bullatus*. *Ranunculus bullatus* subsp. *cytheraeus* (Halácsy) Vierh. is recognized at species rank, and the combination *R. cytheraeus* (Halácsy) Baldini is made to accommodate it. Both taxa are described and illustrated. The names *R. bullatus* L. var. *cuneifolius* Coustur. & Gand., *R. bullatus* L. var. *cyrenaicus* Pamp., *R. bullatus* L. var. *ovatus* Freyn, *R. bullatus* L. var. *prolifer* Gennari, *R. semicalvus* Jord. & Fourr. and *Ionosmanthus plantagineus* Jord. & Fourr. are also typified.

INTRODUCTION

Ranunculus bullatus L., s. l., is a polymorphic taxon distributed in the Mediterranean area (Greuter et al., 1989; Jalas & Suominen, 1989) by scattered populations from Portugal to Greece and North-east Africa (Maire, 1964). It is well-known that there are many difficulties in distinguishing the several infraspecific taxa described within this species (Gandoger, 1889; Vierhapper & Reichinger fil., 1935; Davis, 1965) because many diagnostic characters overlap. As a part of a wider study of this group of taxa in Europe (Baldini, in prep.), it is necessary to establish the correct application of the Linnaean name.

LECTOTYPIFICATION OF *RANUNCULUS BULLATUS* L.

Linnaeus (1753: 550) used a diagnosis '*Ranunculus foliis ovatis serratis, scapo nudo unifloro*' cited from his earlier *Hortus Cliffortianus* (Linnaeus, 1738) along with three synonyms from, respectively, Bauhin (1623), Dodoens (1583) and Clusius (1601). He also recognized one unnamed variety (var. β) based on a series of polynomials of Morison (1680) ' β . *Ranunculus latifolius bullatus autumnalis, flore pleno & prolifero*. Moris. hist. 2. p. 447. s. 4. t. 31. f. 49. 50. 51.'. Finally, Linnaeus added '*Habitat in Lusitania, Creta*', and a symbol to indicate a perennial life form (Fig. 1).

Although there are two sheets referred to this taxon in Linnaeus' Herbarium at LINN (numbering follows Savage, 1945), 715.10 lacks the relevant *Species Plantarum* number (i.e. '8') and is therefore a post-1753 addition to the herbarium (see Turland & Jarvis, 1997: 458–459), and 715.11 is entirely unannotated. We therefore do not accept either sheet as original material for this name, although both are identified (e.g. by Davis, 1965: 179) as belonging to the typical subspecies. There is no relevant material in any of the other 'general' Linnaean collections (e.g. H, MW, S, SBT, UPS), nor is there any in the Burser Herbarium (UPS) which can be associated with the Bauhin polynomial cited by Linnaeus. However, there is a specimen in the Clifford Herbarium (Herb. Clifford: 229, *Ranunculus* 7, BM! (viewable at <http://www.nhm.ac.uk/botany/databases/clifford>)) which can be associated with both var. β of *Hortus Cliffortianus* (Linnaeus, 1738) and var. β of *Species Plantarum*

(Linnaeus, 1753) and is a double-flowered form ('*flore pleno & prolifero*') of *R. bullatus*. It is similar to the plant portrayed by Cornut (1635: t. 95; cited by Linnaeus as a synonym in 1738 but omitted in 1753) and Morison (1680: s. 4, t. 31, f. 50). The Clifford specimen is original material for the name.

The other original elements for the name are drawn from the cited and uncited illustrations. The woodcut of Dodoens' (1583: 426) '*Ranunculus Lusitanicus*' was copied by Morison (1680: s. 4, t. 31, f. 51, as '*Ranunculus latifolius autumnalis caule hirsuto flore minimo, nobis*') via the uncited Clusius (1601: 238, as '*Ranuncul. grumosa rad. l. species II*') and represents a plant from Crete (notwithstanding Dodoens' belief that the plant came from Portugal) identifiable as *R. bullatus* subsp. *cytheraeus* (Hal.) Vierh. (see Greuter et al., 1989: 428).

Clusius' (1601: 238) '*Ranunculus grumosa radice l.*', also copied by Morison (1680: s. 4, t. 31, f. 49, as '*Ranunculus latifolius autumnalis fl. simplici, nobis*'), represents a plant from the Iberian Peninsula, identifiable as *R. bullatus* L. subsp. *bullatus*.

Lastly, for his unnamed variety β , Linnaeus cited Morison's (1680: s. 4, t. 31, f. 49, 50 and 51) along with a single, composite polynomial that Linnaeus derived from those used by Morison for his three illustrations (for the identities of these, see above).

There are therefore six possible elements from which a lectotype could be chosen: the Clifford material, the element represented by Dodoens' illustration, that represented by Clusius' figure, and the three Morison figures associated with variety β . Clifford's material and Morison's f. 50 have petaloid staminodia ('*flore pleno & prolifero*'), are almost certainly of cultivated origin and would not effectively restrict the application of subsp. *bullatus*. Dodoens' illustration and Morison's f. 51 belong to subsp. *cytheraeus* so either would make an unfortunate and disruptive type choice. However, Clusius' illustration (copied by Morison as his f. 49) belongs to subsp. *bullatus* and '*Ranunculus grumosa radice l.*' in Clusius, *Rariorum plantarum historia*: 238 (1601) is therefore designated here as the lectotype of *Ranunculus bullatus* L. (Fig. 2). Given its somewhat schematic nature, it seems wise to designate an epitype to establish its application beyond any possible doubt, which we do here (see Taxonomic Summary).

Study of the variation in *Ranunculus bullatus* L. s. l. by the senior author (Baldini, in prep.), leads to the conclusion that *R. bullatus* L. subsp. *cytheraeus* (Halácsy) Vierh. is best recognized at species rank. This is based on several distinct features, including flower size

- bullatus*, 8. *RANUNCULUS* foliis ovatis ferratis, scapo nudo unifloro. *Hort. cliff.* 229.
Ranunculus latifolius bullatus, *asphodeli radice*. *Banb. pin.* 181.
Ranunculus lusitanicus. *Dod. pempt.* 429.
Ranunculus grumosa radice 1. *Clus. hist.* 1, p. 238.
 β. *Ranunculus latifolius bullatus autumnalis*, flore pleno & prolifero. *Morif. bist.* 2. p. 447. f. 4. t. 31. f. 49. 50. 51.
Habitat in Lusitania, Crqta. 2

Fig. 1 The protologue of *Ranunculus bullatus* Linnaeus, *Species Plantarum*: 550 (1753).

Ranuncul. grumosa radice 1.

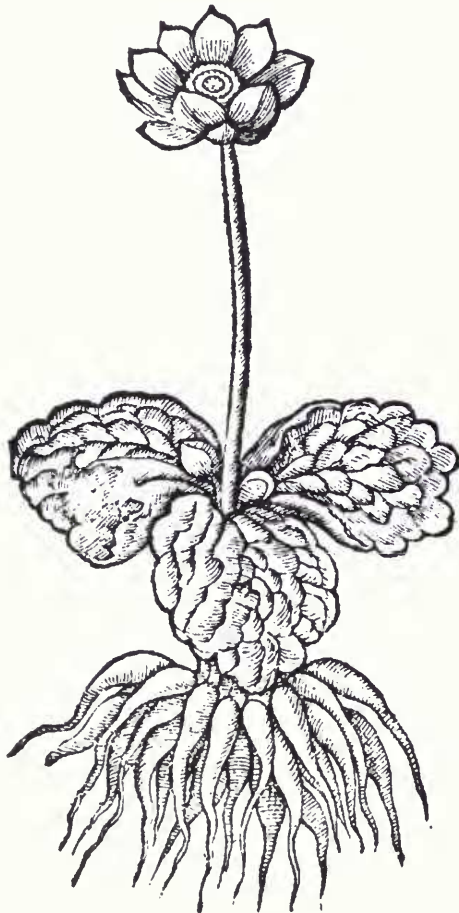


Fig. 2 '*Ranunculus grumosa radice* I.' in Clusius, *Rariorum plantarum historia*: 238 (1601), the lectotype of *Ranunculus bullatus* L.

and arrangement, leaf morphology and habit, and their correlation with geographical distribution. A new combination, relevant synonymy, key and species descriptions and illustrations are given below.

TAXONOMIC SUMMARY

Key to *Ranunculus bullatus* and *R. cytheraeus*

- 1 Leaf lamina ovate, crenate, never mucronate, more or less bullate and pubescent, sometimes glabrous or hispid above or beneath; scape to 20–25 cm long, never branched, more or less pubescent, 1-flowered; achenes with a short, curved beak 1. **R. bullatus**
- Leaf lamina obovate to elliptical, crenate-denticulate, mucronate, upper surface villose especially at the margin; scape to 8 cm long, branched with small bracteole at the base of each branch, with spreading hairs, 1–2-flowered; achenes with a short, uncinate beak 2. **R. cytheraeus**

1. ***Ranunculus bullatus* L., Sp. pl. 1: 550 (1753).** Type: '*Ranunculus grumosa radice* I.' in Clusius, *Rar. pl. hist.*: 238 (1601), lectotype, designated here. Epitype: 'Flora Lusitanica. Prov. Estremadura, ad pagum, 1848, leg. Dr. Welwitsch 198' (BM!), designated here.

Fig. 3.

Ranunculus supranudus Jord. & Fourr., *Brev. Pl. Nov.* 1: 1 (1866). Type: 'Algeria: Daroussa prope Bône, ex dom. A. Joannon'. Not located.

R. semicalvus Jord. & Fourr., *Brev. Pl. Nov.* 1: 2 (1866). Type: 'Ajaccio, 15 octobre 1866, col. De Marsilly 101 bis' (P!), lectotype, designated here; BM!, K!-isotypes).

R. bullatus L. var. *prolifer* Gennari, *Spec. e var. Fl. Sard.*: 29 (1866), non Cavara & Grande in *Boll. Soc. Bot. Ital.*: 101 (1925). Type: '*Ranunculus bullatus* scapo diviso seu prolifero, Cagliari ai Cappuccini, 9bre. 1863, Gennari s. n.' (TO!-lectotype, designated here).

Ionosmanthus semicalvus (Jord. & Fourr.) Jord. & Fourr., *Icon. Fl. Eur.* 2: 14 (1869).

I. plantagineus Jord. & Fourr., *Icon. Fl. Eur.* 2: 14 (1869). Type: 'Algeria, Costantine, tab. CCXLIV. – 326' in Jordan & Fourreau, *Icon. Fl. Eur.* 2. (1869), lectotype, designated here.

R. bullatus L. var. *α ovatus* Freyn in Willk. & Lange, *Fl. Hisp. Prodr.* 3: 919 (1880). Type: 'Malaga, Willkomm exsicc. 1844, n. 418', (BM!-lectotype, designated here; G!-isotype).

R. bullatus L. var. *β bellidifolius* Freyn in Willk. & Lange, *Fl. Hisp. Prodr.* 3: 919 (1880). Type: 'Malaga, Kalisch'. Not located.

R. bullatus L. subsp. *supranudus* (Jord. & Fourr.) Vierh. in *Österr. Bot. Z.* 84: 129 (1935).

R. bullatus L. subsp. *bullatus* var. *plantagineus* (Jord. & Fourr.) Maire in Jahand. & Maire, *Cat. Pl. Maroc*: 994 (1940).

R. bullatus L. subsp. *bullatus* var. *supranudus* (Jord. & Fourr.) Maire in Jahand. & Maire, *Cat. Pl. Maroc*: 994 (1941).

R. bullatus L. subsp. *eu-bullatus* Maire, *Fl. Afrique N.* 11: 139 (1964).

Perennial herb with fibrous roots and fusiform tubers; leaves (2–)3–5(–7) in basal rosette; petiole 2–5(–7) cm long, with silky hairs; lamina ovate, crenate, sometimes crenate-denticulate, never mucronate, more or less bullate and pubescent, sometimes glabrous or hispid above or beneath, (1–)2–8 × 1–5(–6) cm; scapes erect, never branched, up to 20–25 cm long, more or less pubescent, sometimes glabrous, 1-flowered; flowers 1–2(–3) cm in diameter, with 5 green sepals 0.3–0.6 cm long and 5–10(–12) yellow and obovate petals 0.5–1.5 cm long; receptacle glabrous, not elongated; achenes glabrous, ovate-inflated with a short and curved beak.

DISTRIBUTION

EUROPE. Tutin (1964: 234); Greuter et al. (1989: 428); Jalas & Suominen (1989: map no. 1839); Tutin & Akeroyd (1993: 281). **Portugal:** Pereira

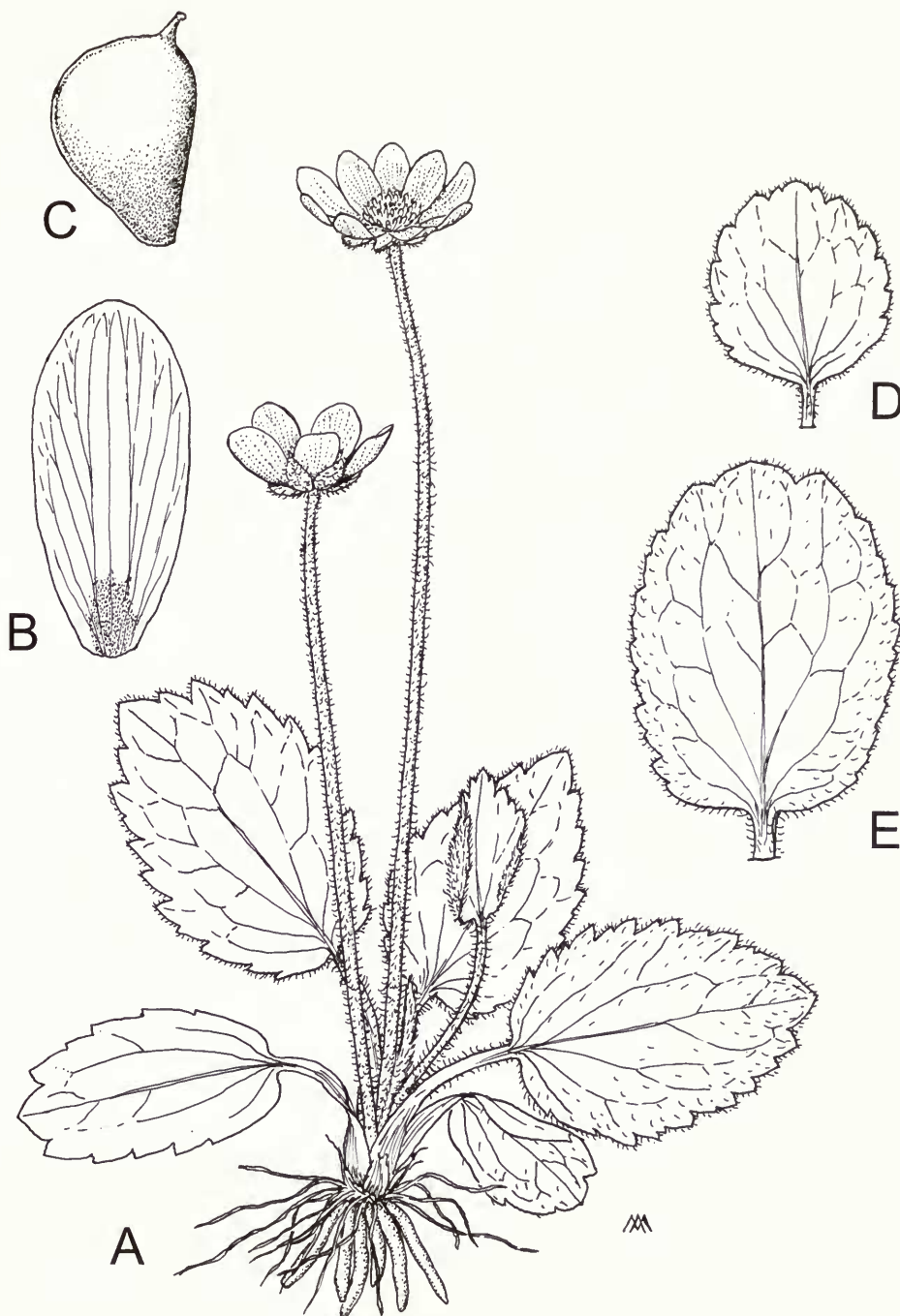


Fig. 3 *Ranunculus bullatus* L. From the epitype specimen, Welwitsch 198 (BM), A. Maury delineavit. A. whole plant $\times 1$; B. petal $\times 4$; C. achene $\times 20$; the additional leaves ($\times 1$) show two of the more frequent foliar morphotypes found in this variable species. The upper leaf (D) is from a collection from the Balearic Islands (Bianor 2518, BM!); the lower leaf (E) is from a collection from Sicily (Ross 103, G!).



Fig. 4 *Ranunculus cytheraeus* (Halácsy) Baldini. From material from Cyprus (Agia Napa distr., Famagusta, 15 Dec. 1940), Davis 2052 (BM), A. Maury delineavit. A. whole plant $\times 2$; B. petal $\times 5$; C. achene $\times 20$.

Coutinho (1974: 279). **Spain:** López González (1986). **Balearic Islands:** Smythies (1984: 448). **Corsica:** Paradis et al. (2000). **Italy** (incl. Sardinia and Sicily): Fiori (1898: 506; 1924: 666); Zangheri (1976: 161); Pignatti (1982: 318). **Crete:** Turland et al. (1993: 132 sub *R. bullatus* L. p.p.). **Turkey:** Davis (1965: 179). **Cyprus:** Meikle (1977: 48). **NORTH AFRICA.** Maire (1964: 137 excl. Libya where only *R. cytheraeus* (Halácsy) Baldini occurs). **Morocco:** Battandier (1888: 10); Jahandiez & Maire (1932: 250); Nègre (1961: 241). **Algeria:** Battandier & Trabut (1904: 12); Quézel & Santa (1962: 370). **Tunisia:** Battandier & Trabut (1904: 12); Pottier-Alapetite (1979: 156).

2. *Ranunculus cytheraeus* (Halácsy) Baldini, **stat. nov.**

Ranunculus bullatus L. var. *cytheraeus* Halácsy in Vierh., *K. K. Zool.-Bot. Ges. Wien* **54**: 483 (1904). Type: '*Ranunculus bullatus* L. v. *cytheraeus*. Foliis grosse inciso-dentatis, sparse pilosis subglabrisve, petalis 5, obovatis vel obovato-cuneatis. Ins. Cythera: in dumosis siccis reg. inf., 25.XI.1903, *Chr. Leonis* 5' (LY!-lectotype, designated here; LY!-isotypes).

Fig. 4.

R. bullatus L. var. *cuneifolius* Coustur. & Gand. in *Bull. Soc. Duffour*:

36 (1914). Type: 'Ranunculus bullatus L., Spec., 774. V. cuneifolius Cousturier et Gandoger. Var. nov.! Cat. Cam. 37 – var. Crète: Candie. Dans les collines au nord d'Hagios-Déka. Décembre 1913, *P. Cousturier 1479*' (LY!-lectotype, designated here; MPU!-isotype).

R. bullatus L. forma *cuneifolius* (Coustur. & Gand.) Coustur. & Gand. in *Bull. Soc. bot. France* **63**: 13 (1916).

R. bullatus L. var. *cyrenaicus* Pamp. in *Nuovo Giorn. Bot. Ital., n. s.*, **26**: 212 (1919). Type: 'Ranunculus bullatus L. var. cyrenaicus Pamp., 5 Gennaio 1917: in fioritura, depressione del terreno fra le due Palme e la linea ferroviaria di Benina in direzione del Giok (Kebir). Arabo = Ain el noogia = occhio di pecora. Gli arabi ne raccolgono i fiori e li uniscono alla mastiche ricavata dalla pianta Hellek (*Periploca laevigata*) detta Elek, per darle il colorito giallo. Zanon 24' (FI!-lectotype, designated here).

R. bullatus L. var. *prolifer* sensu Cavara & Grande in *Bull. Soc. Bot. Ital.*: 101 (1925), non Gennari, *Spec. e var. Fl. Sard.*: 29 (1866).

R. bullatus L. subsp. *cytheraeus* (Halácsy) Vierh. in *Österr. Bot. Z.* **84**: 129 (1935).

R. bullatus L. subsp. *cyrenaicus* (Pamp.) Maire, *Fl. Afrique N.* **11**: 139 (1964).

Perennial herb with fibrous roots and fusiform tubers; leaves 3–5(–9) in basal rosette, with silky hairs; pedicels 0.5–1.5(–2.5) cm long; lamina from obovate to elliptical, crenate-denticulate, mucronate, upper surface villose especially at the margin and somewhat pubescent beneath; scapes erect, 3–7(–8) cm long, with spreading hairs, branched with small bracteoles at the base of branch; flowers 1–2, (0.5–)1–1.5(–2) cm in diameter, with 5 green sepals 0.3–0.5(–0.7) cm long and 5(–6) yellow and obovate petals, (0.5–)0.8–1.2(–1.5) cm long; receptacle glabrous and elongated; achenes glabrous, 0.1–0.3 cm long, inflated with a short and uncinat beak.

DISTRIBUTION

GREECE. *Cythera*: Halácsy (1904 sub *R. bullatus* L. var. *cytheraeus* Halácsy); Davis (1965: 179 sub *R. bullatus* subsp. *cytheraeus* (Halácsy) Vierh.). **Cyprus**: Davis (1965: 179 sub *R. bullatus* subsp. *cytheraeus* (Halácsy) Vierh.); Meikle (1977: 48 sub *R. bullatus* subsp. *cytheraeus* (Halácsy) Vierh.). **Crete**: Rechinger (1943: 188 sub *R. bullatus* L. var. *cuneifolius* Coustur. & Gand. p.p. & var. *cytheraeus* Halácsy in Vierh. p.p.); Barclay (1986: 82 sub *R. bullatus* L. p.p.); Turland et al. (1993: 132 sub *R. bullatus* L. p.p.).

NORTH AFRICA. **Libya**: Béguinot & Vaccari (1912a, 1912b sub *R. bullatus* sensu Bég. & Vaccari, non L. (1753); Pampanini & Zanon (1919: 212 sub *R. bullatus* L. var. *cyrenaicus* Pamp.); Pampanini (1931: 203 sub *R. bullatus* L. var. *cyrenaicus* Pamp.); Cavara & Grande (1925 sub *R. bullatus* var. *prolifer* sensu Cavara & Grande, non Gennari (1866); Maire (1964: 139 sub *R. bullatus* L. subsp. *cyrenaicus* (Pamp.) Maire; Davis (1965: 179 sub *R. bullatus* L. subsp. *cytheraeus* (Halácsy) Vierh.); Qaiser (1984: 35 sub *R. bullatus* L. subsp. *cytheraeus* (Halácsy) Vierh.).

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